

-
-
-
-
-
-

Distributed Generation in Minnesota



Jeffrey Haase
State Energy Office
jeffrey.haase@state.mn.us



Minnesota's Energy

- Minnesota has no “traditional” indigenous energy resources
- Minnesotans spend \$9,000,000,000 each year on energy
- Most energy dollars leave the local economies as payments for energy bills.



MINNESOTA
DEPARTMENT OF
COMMERCE

Utilizing Minnesota's Resources

- Minnesota currently has the 4th greatest amount of operating wind capacity in the nation
- St. Paul District Energy is a national model
- We have a wealth of biomass resources that are mostly underutilized



Technology

- Microturbines
- Reciprocating Engines
- Fuel Cells
- Wind Turbines
- Photovoltaics
- Capital cost reductions are key to full acceptance of the technology.
- Competition is increasing
- Incentives being developed



Niche Markets

- Hotels
- Hospitals
- Greenhouses (CO₂)
- Grid constraints
- Reliability concerns
- High outage costs
- Solar
- Wind
- Biomass
- Landfill gas



Current Realities

Electricity is Cheap

- MN is below the national average cost
- MN is not deregulated

Natural Gas is Volatile

- Considerable increases in the amount of natural gas generated electricity
- February 2003
- Spikes are not limited to the winter



Current Realities

- *We have the grid of a third world country.*
 - *Spencer Abraham*
Secretary of Energy
- Terrorism concern
- Lack of high quality grid-independent power.



Meeting the Needs of the Market

Customer sophistication is increasing

Reliability - The cost of downtime

Power Quality

Resource utilization

DG Opportunities



- *Waste* Products
- Steam Pressure Reduction
- Coincident electrical and thermal loads
- Downtime avoidance



Legislative Initiative

- The MN PUC initiated working groups on August 20, 2001 to establish generic standards for utility tariffs for interconnection and operation of distributed generation.
- This order was in compliance with Minnesota Statute 216b.1611, subd. 2



DG Technical Working Group

... draft documents and guidelines for tariffs so that a person interested in developing distributed generation can apply for interconnection to any electric utility in the state with the expectation that the requirements for making interconnection -



DG Technical Working Group

- 1) are uniform across electric utilities,*
- 2) are clear, concise, understandable and easy to follow,*
- 3) impose obligations only if they are reasonably necessary for the safety of persons and equipment or for the reliable operation of the electric distribution system,*





DG Technical Working Group

- 4) *require no more than the minimum studies necessary for the safe and reliable interconnection of the unit with the electric distribution system, and*
- 5) *provide for conducting any necessary studies quickly and efficiently.*



DG Rate Working Group

The Rate Work Group shall draft documents and guidelines for tariffs so that a person interested in developing distributed generation can apply for interconnection to any electric utility in the state with the expectation that:



DG Rate Working Group

- 1) prices for electric service provided by the electric utility to the generator - including supplemental, maintenance, and backup power services - will be reasonable and non-discriminatory; and*
- 2) prices charged for power supplied by the generator to the electric utility will reflect the value of the power to the utility.*



DG Working Groups

- PUC order charged the Department of Commerce with establishing two working groups.
 - Rates
 - Technical Interconnection
- Goal of establishing generic interconnection standards for all MN utilities.



Principles of the Rate Group

Setting rates for services provided by DG customers to utilities:

Rates should reflect the value of the distributed generation to the utility, including any reasonable credits for emissions or for costs avoided on the generation, transmission and/or distribution system.



Principles of the Rate Group

Setting rates for energy and capacity
purchased from DG facilities:

*Rates should reflect the costs the utility
expects to avoid. To the extent practical,
these costs should reflect seasonal and
peak/off peak differences in costs.*



Outcome of the Working Groups

- www.newrules.org/dgtariff
- The issue is still open for comment
- The PUC could make a final decision late this summer



CIP

Utility CIP Spending Allowances

Utilities *shall* spend 5% on *cost effective* distributed generation projects

Demonstration & Experience

“Turf” issues



Environmental Review

- Depending on the size of the facility either an Environmental Assessment Worksheet or an Environmental Impact Statement may have to be prepared.
- *Any cogeneration facility less than 5 MW is exempted from environmental review.*



Future DG Activities

- Demonstrations will continue
 - Fuel Cells
 - Landfill Gas
 - CHP
- Greater acceptance as the technology matures



● ● ● ● ● ● ● ● ● ●

Jeffrey.haase@state.mn.us
651-297-5648

